

# The Effect of Name-Based Reporting and Partner Notification on HIV Testing in New York State

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New York State leads the nation in AIDS cases, with more than 170 000 AIDS cases diagnosed through 2005.<sup>1</sup> Prior to 2000, public health surveillance in New York State was carried out exclusively through the reporting of AIDS cases. AIDS case surveillance, however, reflects disease transmission patterns in the distant past: historically, it has taken 10 years on average for persons to progress from HIV infection to AIDS. The advent of highly active antiretroviral therapy in the mid-1990s significantly slowed progression from HIV infection to AIDS, further reducing the value of AIDS case surveillance in tracking the HIV epidemic.<sup>2</sup> In 1998 the Centers for Disease Control and Prevention (CDC) recommended that all states and local surveillance programs undertake name-based HIV reporting.

A primary concern with name-based HIV reporting is that it might deter HIV testing behavior. Research from other states has yielded conflicting findings. In the late 1980s and early 1990s, several surveys of HIV testing behavior in at-risk populations suggested a deterrent effect of HIV reporting.<sup>3–6</sup> More recent studies have found fewer or no deterrent effects. The HIV Testing Survey<sup>7</sup> was conducted in 9 states with differing HIV reporting policies in the mid-1990s. Results indicated a low awareness of states' reporting laws among high-risk individuals in general and little evidence that HIV testing decisions were being strongly influenced by a concern about name-based HIV reporting.<sup>8–11</sup> However, people who lived in states with name-based HIV reporting were more likely to delay—rather than completely avoid—HIV testing,<sup>8</sup> and concerns about name-based reporting were expressed by some men who have sex with men and intravenous drug users.<sup>8,9</sup>

In the late 1990s, the Multistate Evaluation of Surveillance for HIV project studied a probability sample of nearly 2000 AIDS

**Objectives.** We examined the effect of New York's HIV Reporting and Partner Notification law on HIV testing levels and on the HIV testing decisions of high-risk individuals.

**Methods.** In-person interviews were administered to 761 high-risk individuals to assess their knowledge, attitudes, and behaviors regarding HIV testing and reporting. Trends in HIV testing were also assessed in publicly funded HIV counseling and testing programs, Medicaid, and New York's Maternal Pediatric Newborn Prevention and Care Program.

**Results.** High-risk individuals had limited awareness of the reporting and notification law, and few cited concern about named reporting as a reason for avoiding or delaying HIV testing. HIV testing levels, posttest counseling rates, and anonymous-to-confidential conversion rates among those who tested HIV positive were not affected by the law. Medicaid-related HIV testing rates also remained stable. HIV testing during pregnancy continued to trend upward following implementation of the law. Findings held true within demographic and risk-related subgroups.

**Conclusions.** HIV reporting has permitted improved monitoring of New York's HIV/AIDS epidemic. This benefit has not been offset by decreases in HIV testing behavior, including willingness to test among those at high risk of acquiring HIV. (*Am J Public Health.* 2008;98:728–735. doi:10.2105/AJPH.2006.092742)

patients in 8 states.<sup>12</sup> The percentage of study participants obtaining timely medical care differed only slightly in states with and without name-based HIV reporting, with fear of being reported to the health department given as a reason for delaying care by 9% of respondents; none cited this as the main reason.

A few studies have addressed prenatal HIV testing and found no evidence that maternal HIV testing is affected by the initiation of name-based HIV reporting.<sup>13,14</sup> A 1998 study by Nakashima et al. examined HIV testing levels in publicly funded HIV testing sites in 6 states before and after the introduction of HIV reporting.<sup>15</sup> The authors found no decreases in the total number of HIV tests reported after HIV reporting laws took effect in any state; however, statistically significant changes in testing levels were found among select HIV-risk and demographic groups across states. This study has been criticized for failing to use data from states with high HIV prevalence<sup>16</sup> and for not further investigating the subgroup differences.<sup>17</sup>

New York State's HIV Reporting and Partner Notification (HIVRPN) law became effective June 1, 2000.<sup>18</sup> The law requires named reporting of persons with HIV infection, HIV-related illness, and AIDS by physicians and laboratories. Physicians also are required to report known partners of infected individuals, but individuals testing HIV positive are not required to name partners for the purpose of partner notification. An intimate partner violence screening tool must be applied for each identified partner, and partner notification may be deferred in cases where a risk of violence exists (on the part of the partner or the infected individual). Consistent with CDC guidelines for HIV case surveillance,<sup>19</sup> New York's law retains anonymous HIV counseling and testing to offset potential deterrent effects of HIV reporting on test-seeking behavior. Several studies have addressed the need for anonymous HIV counseling and testing, with many studies suggesting that anonymous counseling and testing may be an important component to

HIV prevention, especially for certain subgroups.<sup>11,20–24</sup>

Previous examinations of HIV reporting laws were largely limited to states with lower prevalences of HIV. In addition, concern was expressed that the formal integration of HIV partner notification and intimate partner violence screening into New York's law might affect HIV testing behavior. The implementation of the HIVRPN law provided an opportunity to assess the effect of the law, including the partner notification and intimate partner violence screening requirements, on HIV testing behaviors in a high-HIV prevalence state.

## METHODS

### HIV Testing Attitudes and Practices Survey

We conducted surveys of at-risk individuals with a modified version of CDC's HIV Testing Survey.<sup>7</sup> The HIV Testing Attitudes and Practices Survey assessed respondents' demographic characteristics, HIV testing experiences, knowledge of HIV testing policies and methods, sexual behavior, drug use, and HIV prevention practices. Additional questions assessed knowledge about and attitudes toward New York's HIVRPN legislation. A description of the HIV Testing Attitudes and Practices Survey methods was published elsewhere.<sup>25</sup>

The HIV Testing Attitudes and Practices Survey was administered in 4 New York cities: Buffalo (2001–2002), Rochester (2002–2003), and Syracuse and Albany (2003–2004). Primary enrollment occurred in 3 venues: syringe exchange programs reaching intravenous drug users, sexually transmitted disease (STD) clinics reaching high-risk heterosexuals, and bars reaching men who have sex with men. The HIV Testing Attitudes and Practices Survey sampling protocol ensured that the demographic distribution of sampled respondents mirrored that of each testing venue (i.e., women composed approximately 25% of total participants at the syringe exchange programs and approximately 25% of the HIV Testing Attitudes and Practices Survey respondents). The survey was administered in all 3 venues in Buffalo and Rochester and only in bars frequented by men who have sex with men in Syracuse and

Albany. The total sample was 761 respondents, including 362 men who have sex with men, 198 high-risk heterosexuals, and 201 intravenous drug users. We used logistic regression models to examine differences in knowledge and concerns about New York's HIVRPN law by venue, gender, age, race/ethnicity, and HIV testing history. SPSS version 11.0 (SPSS Inc, Chicago, Ill) was used to analyze all interview data.

### HIV Testing Trends Before and After the Notification Legislation

An interrupted time-series design was used to assess the effect of the HIVRPN law on HIV testing levels of publicly funded counseling and testing sites, on billing for HIV pre- and posttest counseling among Medicaid clients, and on rates of prenatal HIV testing.

#### *State-funded counseling and testing sites.*

State-funded HIV counseling and testing providers in New York are required to submit data on each HIV test performed, which is entered into the state's HIV Counseling and Testing System database. Information includes the date of the HIV test, client demographic information and HIV risk-related behaviors, the type of testing venue, the HIV test result, and whether the client returned for posttest counseling. The HIV Counseling and Testing System database captures publicly funded HIV testing statewide, with the exception of anonymous testing occurring in New York City. Anonymous tests performed in New York City account for a small fraction of the HIV testing activity occurring in New York State (<9000 anonymous tests were conducted per year in New York City between June 1, 2000, and December 31, 2003).<sup>26</sup> Anonymous HIV testing occurring outside New York City is conducted by the state and captured by the HIV Counseling and Testing System database. Anonymous counseling and testing clients who test positive for HIV have the option of converting their anonymous test result to confidential status (confidential to the New York State Health Department) at the posttest counseling session. Doing so gives individuals access to HIV health care services without retesting but also results in their name being reported to the state.

Outcome variables for HIV Counseling and Testing System data were: (1) the number of

HIV tests conducted, (2) the percentage of HIV tests followed by posttest counseling, and (3) the percentage of positive HIV test results converted from anonymous to confidential status (gathered from anonymous counseling and testing data only). We analyzed data from January 1998 through December 2002, 29 months of preintervention and 30 months of postintervention data. To minimize the effect of changes in counseling and testing venues and sites over time, we included only those testing venues, and only those sites within venues, that submitted data throughout the entire study period. This method excluded 1-time testing initiatives, prenatal testing sites (captured by another data set), providers of testing funded directly by the CDC, and testing in criminal justice and youth services settings. This method resulted in the inclusion of higher-risk testing settings, with included individuals testing HIV positive at a rate 3 times that of excluded individuals (3.3% vs 1.1%, respectively). The testing venues included in our analyses were anonymous-testing sites (except in New York City), substance use treatment centers, and community health centers.

*Medicaid claims.* New York State Medicaid claims were used to examine HIV counseling and testing performed in sites that were not funded by public grants, such as clinics and doctors' offices. We examined HIV pretest and HIV posttest Medicaid billings with a method similar to that described above, with the following exceptions: (1) the Medicaid data were available from January 1998 through April 2002, (2) the individual (rather than the HIV test) served as the unit of analysis, and (3) there was no need to restrict analyses to certain providers because Medicaid data are population data; all New York State Medicaid claims were used.

*Prenatal HIV testing.* Prenatal HIV testing trends were examined using the HIV testing histories of all women who gave birth in New York State between January 1998 and December 2003. These data were reported by each birth facility as part of the Health Department's Maternal Pediatric Newborn Prevention and Care Program. Demographic data collected included month and year of delivery, race/ethnicity, and zip code of residence. HIV testing history data included

**TABLE 1—Data Used to Analyze the Effect of the HIV Reporting and Partner Notification Law on HIV Testing Trends: New York State**

Data Source	Period of Analysis <sup>a</sup>	Dependent Variables	Subgroup Analyses
HIV Counseling and Testing System database <sup>b</sup>	January 1998 to December 2002	Number of HIV tests, percentage of persons tested for HIV who received posttest counseling, percentage of positive HIV test results converted from anonymous to confidential status <sup>c</sup>	Gender (female, male), race/ethnicity (White, Black, Hispanic), HIV risk factor (heterosexual, intravenous drug user, men who have sex with men), and region (New York City, rest of the state) <sup>d</sup>
New York State Medicaid program	January 1998 to April 2002	Number of HIV pretest billings and the number of HIV posttest billings	Gender (female, male) and region (New York City, rest of the state)
Maternal Pediatric Newborn Prevention and Care Program	January 1998 to December 2003	Percentage of women giving birth who had HIV testing during pregnancy	Race/ethnicity (White, Black, Hispanic) and region (New York City, rest of the state)

<sup>a</sup>Data were collected monthly from each source.

<sup>b</sup>The database contains data from state-funded testing and counseling providers in 3 venues: anonymous-testing sites (except in New York City), substance use treatment centers, and community health centers.

<sup>c</sup>Clients receiving anonymous counseling and testing who test positive for HIV have the option of converting their anonymous test result to confidential status at the posttest counseling session. These figures were gathered from anonymous-counseling and -testing data only. There were not enough cases to conduct time-series analyses on conversions from anonymous to confidential status.

<sup>d</sup>New York City and the rest of the state analyses were conducted for substance abuse treatment and community health centers that provided data to the counseling and Testing System database only.

whether or not the mother was tested during the current pregnancy.

**Measurements.** Table 1 summarizes the characteristics of the 3 data sets. Monthly data served as the unit of analysis for each data set. Sets of interrupted time-series analyses measuring the effect of the HIVRPN legislation on each outcome variable were estimated for the total sample and within each subgroup detailed in Table 1. We used the intervention analysis developed by Box and Taio based on the Box–Jenkins autoregressive, integrated, moving average (ARIMA) time-series modeling technique.<sup>27,28</sup> ARIMA modeling uses regression analysis to control for 3 common sources of noise present in time-series data sets: trend, seasonality, and random error (see McDowall et al. for an excellent discussion of ARIMA modeling<sup>29</sup>). We used SPSS version 11.0 to analyze all data associated with this component of the study.

The models reported here for HIV Counseling and Testing System and Medicaid data used the HIVRPN law's June 1, 2000, implementation date as the sole intervention point. Additional intervention points were initially included in each model, representing initial passage of the HIVRPN legislation (July 7, 1998) and publication of the regulations (March 17, 1999) and their revisions (December 15, 1999) implementing the legislation. Because these intervention points did not

affect the results, the final models used only June 1, 2000.

Because Maternal Pediatric Newborn Prevention and Care Program data represent HIV testing at any point in the 9 months preceding the mother's delivery date, the intervention point for this data set was not easily defined. Women giving birth between June 1, 2000, and roughly March 1, 2001, might have been tested either before or after the June 1, 2000, implementation date. To account for this uncertainty, we created 3 additional intervention points for this data set, representing the HIVRPN implementation date adjusted forward by 3, 6, and 9 months.

## RESULTS

### HIV Testing Attitudes and Practices Survey Results

Table 2 describes the HIV Testing Attitudes and Practices Survey sample characteristics and participants responses to questions assessing knowledge about the HIVRPN law and concern about name-based reporting. Multivariate odds ratios (ORs) to selected reference groups are displayed. The HIV Testing Attitudes and Practices Survey respondents were overwhelmingly men but were well represented across categories of age and race/ethnicity. Nearly 50% of the survey respondents were interviewed in bars, and slightly

more than 60% reported that their most recent HIV test took place after implementation of the HIVRPN law. Nearly 1 in 5 survey respondents reported never having been tested for HIV, with STD clinic respondents most likely to report never being tested (28.2%), followed by bar clientele (20.5%) and syringe exchange program respondents (3.7%; data not shown).

Most respondents were not aware of New York's named-based HIV reporting requirement: although 47.5% of participants were aware that HIV results are reportable in some manner (data not shown), just 1 in 4 respondents (26.4%) knew that positive test results are reported by name. Multivariate analyses revealed that venue, age group, gender, race/ethnicity, and HIV testing history were all significant predictors of knowledge: women (OR=1.84) and individuals aged 45 years and older (OR=2.07) were significantly more likely than were men and those individuals aged 18 to 24 years to know that HIV is reportable by name. Hispanic respondents (OR=.36) and those who reported never testing for HIV (OR=.37) were significantly less likely to know this fact relative to White respondents and those who tested for HIV after the law took effect (Table 2).

Respondent knowledge about New York State's partner notification requirement was greater than knowledge of named HIV reporting, with 50.6% of the sample knowing

**TABLE 2—Sample Characteristics and Knowledge About and Attitudes Toward New York's HIV Reporting and Partner Notification Law: HIV Testing Attitudes and Practices Survey, New York State, 2001–2004**

	Respondent Characteristics, No. (%)	Respondents Who Knew That HIV Is Reportable by Name in New York State		Respondents Who Knew That Naming Partners Is Not Required for People Who Test Positive for HIV		Respondents Who Stated Concern About Name Being Reported to Government as a Reason for Delaying or Avoiding HIV Testing <sup>a</sup>	
		No. (%)	Multivariate, <sup>b</sup> OR (95% CI)	No. (%)	Multivariate, <sup>c</sup> OR (95% CI)	No. (%) <sup>d</sup>	Multivariate, <sup>e</sup> OR (95% CI)
Total Sample	761 (100.0)	736 (26.4)	...	656 (50.6)	...	474 (5.1)	...
Venue where survey was taken							
Bar frequented by men who have sex with men	362 (47.6)	351 (31.1)	Reference	297 (53.9)	Reference	227 (4.0)	Reference
STD clinic	198 (26.0)	188 (11.2)	0.19 (0.10, 0.38)	176 (45.5)	0.54 (0.33, 0.88)	158 (5.1)	6.65 (0.17, 2.47)
Syringe exchange program site	201 (26.4)	197 (32.5)	0.83 (0.48, 1.44)	183 (50.3)	1.25 (0.75, 2.10)	89 (7.9)	1.60 (0.35, 7.22)
Age, y							
18–24	172 (22.7)	159 (17.6)	Reference	141 (51.8)	Reference	140 (3.6)	Reference
25–34	254 (33.5)	249 (23.7)	0.92 (0.52, 1.62)	218 (42.2)	0.60 (0.37, 0.98)	158 (5.1)	1.63 (0.42, 6.24)
35–44	204 (26.9)	199 (25.6)	0.90 (0.50, 1.62)	184 (51.6)	0.83 (0.50, 1.38)	108 (7.4)	2.62 (0.72, 9.21)
≥45	129 (17.0)	127 (43.3)	2.07 (1.07, 4.01)	111 (64.9)	1.34 (0.73, 2.48)	68 (4.4)	1.45 (0.29, 7.26)
Gender							
Men	605 (80.1)	586 (27.1)	Reference	520 (50.8)	Reference	378 (4.2)	Reference
Women	150 (19.9)	144 (23.6)	1.84 (1.01, 3.34)	130 (48.5)	1.2 (0.74, 1.99)	93 (8.6)	2.12 (0.58, 7.72)
Race/Ethnicity							
White	241 (33.0)	233 (31.3)	Reference	202 (55.0)	Reference	174 (4.0)	Reference
Black	253 (34.7)	241 (28.2)	0.89 (0.57, 1.40)	216 (58.8)	1.24 (0.81, 1.91)	155 (4.5)	1.90 (0.56, 6.36)
Hispanic	150 (20.5)	149 (16.8)	0.36 (0.20, 0.66)	137 (31.4)	0.37 (0.22, 0.63)	77 (6.5)	1.31 (0.29, 5.95)
Other	86 (11.8)	83 (24.1)	0.78 (0.42, 1.44)	73 (56.2)	1.15 (0.66, 2.02)	49 (8.2)	2.00 (0.51, 7.95)
HIV testing history (most recent test)							
Tested after law took effect	440 (60.6)	423 (29.6)	Reference	395 (47.6)	Reference	202 (3.0)	Reference
Tested before law took effect	155 (21.3)	149 (30.9)	1.10 (.71, 1.71)	125 (59.2)	1.56 (1.01, 2.43)	117 (1.7)	0.49 (0.10, 2.56)
Never tested for HIV	131 (18.0)	130 (12.3)	0.37 (0.20, 0.70)	108 (52.8)	1.37 (0.84, 2.23)	130 (9.2)	4.81 (1.59, 14.57)

Note. OR = odds ratio; CI = confidence interval; STD = sexually transmitted disease. Numbers within subgroups do not add to total cases because of missing data.

<sup>a</sup>Excludes respondents who reported HIV testing without delay.

<sup>b</sup>The analysis was conducted using 666 respondents.

<sup>c</sup>The analysis was conducted using 594 respondents.

<sup>d</sup>Just 1 respondent (0.3%) indicated that concern about having his or her name reported to the government was the “most important reason” for delaying or avoiding HIV testing.

<sup>e</sup>The analysis was conducted using 428 respondents.

that individuals who test positive for HIV are not required to name their partners. Knowledge varied by venue, age group, race/ethnicity, and HIV testing history: STD clinic interviewees and Hispanic respondents were less likely to know that naming partners is voluntary (ORs=0.54 and 0.37, respectively) than were men who have sex with men and White respondents. Those who were tested for HIV before the HIVRPN law went into effect were more likely to know that naming partners is voluntary (OR=1.56) compared with those who were not tested before the law went into effect.

Nearly one third of the survey sample (30%) reported obtaining their most recent HIV test without delay. Survey respondents who reported never being tested for HIV (19%) were asked about their reasons for avoiding testing. Likewise, respondents who had delayed getting their most recent HIV test (51%) were asked about their reason(s) for delay. The reasons given for avoiding HIV testing were similar to those given for delaying testing; thus, responses were grouped together. The last column of Table 2 shows the percentage of respondents who indicated that concern about name-based reporting was a

reason for either delaying or avoiding HIV testing. Just 5.1% of all respondents cited concern about their name being reported to the government as a reason for avoiding or delaying HIV testing, with only 1 person citing this as the most important reason. Concern about name-based reporting as a reason for testing delay or avoidance differed only by HIV testing history: those who had never been tested for HIV were more likely to cite concern about their name being reported to the government as a reason for testing avoidance (OR=4.81) compared with those who had been tested previously; however, this concern



might not have been specifically tied to the HIVRPN law, because just 12.3% of this group knew that HIV is reportable by name in New York State.

HIV Testing Attitudes and Practices Survey respondents who had ever tested for HIV were asked if their last test was anonymous or confidential. The percentage of respondents who reported that their last HIV test was anonymous prior to the HIVRPN law (26/101=25.7%) did not differ significantly from the percentage testing anonymously after the law (121/379=31.9%). There were no statistically significant differences in the propensity to test anonymously (overall or after the law) by venue, age group, gender, or race/ethnicity (data not shown).

### HIV Testing Levels and Posttest Counseling Rates

*Counseling and Testing System database.* Approximately 200 000 HIV tests occurred at study sites in the 3 venues that contributed data to the HIV Counseling and Testing System database from January 1998 through December 2002. Figure 1a shows the total number of HIV tests per month over the study period for each testing setting. Figure 1b shows the rate of HIV posttest counseling. Implementation of the HIVRPN law is indicated by the vertical line in both figures. Table 3 presents a summary of the ARIMA time-series models for HIV testing levels and posttest counseling rates in each setting. After we controlled for existing trends and seasonality in testing levels, post-HIVRPN law changes were not statistically significant in any of the 3 testing settings. Although it failed to reach statistical significance, a steady decrease in the number of anonymous HIV tests conducted was observed, from approximately 800 per month in January 1998 to approximately 400 per month by December 2002 (Figure 1a).

There is no indication that the rate of HIV posttest counseling decreased in any of the 3 HIV Counseling and Testing System database venues following implementation of the HIVRPN law: posttest counseling rates fluctuated around 85% in anonymous and substance abuse treatment settings and around 75% in community health center settings (Figure 1b). Time-series modeling confirmed

these findings: post-HIVRPN law changes were not statistically significant in any of the testing settings (Table 3).

*Medicaid data.* As with HIV Counseling and Testing System data, there is no indication that pretest or posttest counseling in the New York State Medicaid program changed following implementation of the HIVRPN law. ARIMA time-series modeling of Medicaid data also failed to detect an effect from the HIV reporting legislation (Table 3).

*Maternal Pediatric Prevention and Care Program.* A sizable increase in the percentage of women giving birth in New York State during the timeframe studied who received HIV testing occurred primarily before New York State's HIVRPN law was implemented: HIV testing rates rose from about 50% of pregnant women in January 1998 to more than 90% by June of 2000. This increase can be attributed to multiple state-led initiatives, most notably the August 1999 requirement that hospital maternity staff offer expedited HIV testing to all women giving birth without evidence of prenatal testing.<sup>30</sup>

Prenatal HIV testing rates continued to increase slowly after the HIVRPN law went into effect, eventually leveling off at about 95% by the middle of 2001. Time-series modeling confirmed the observation of no effect stemming from the HIV reporting legislation (Table 3).

Sixty-nine individual time-series models were estimated by each client demographic and HIV risk-related subgroup specified in Table 1. The only consistent subgroup trends were observed in anonymous HIV testing levels, which decreased significantly in 6 of the 8 subgroup models. Post-HIVRPN law changes for the vast majority of remaining subgroup models (54 of 61) were not statistically significant, and in the few cases in which significant post-HIVRPN law changes were found, they showed no clear patterns.

*Conversions from anonymous to confidential status.* Clients testing positive for HIV with anonymous testing providers have the option of converting their anonymous test result to confidential status at posttest counseling. Rates of conversion among HIV-positive individuals returning for posttest counseling were not significantly different following the implementation of New York's HIVRPN law

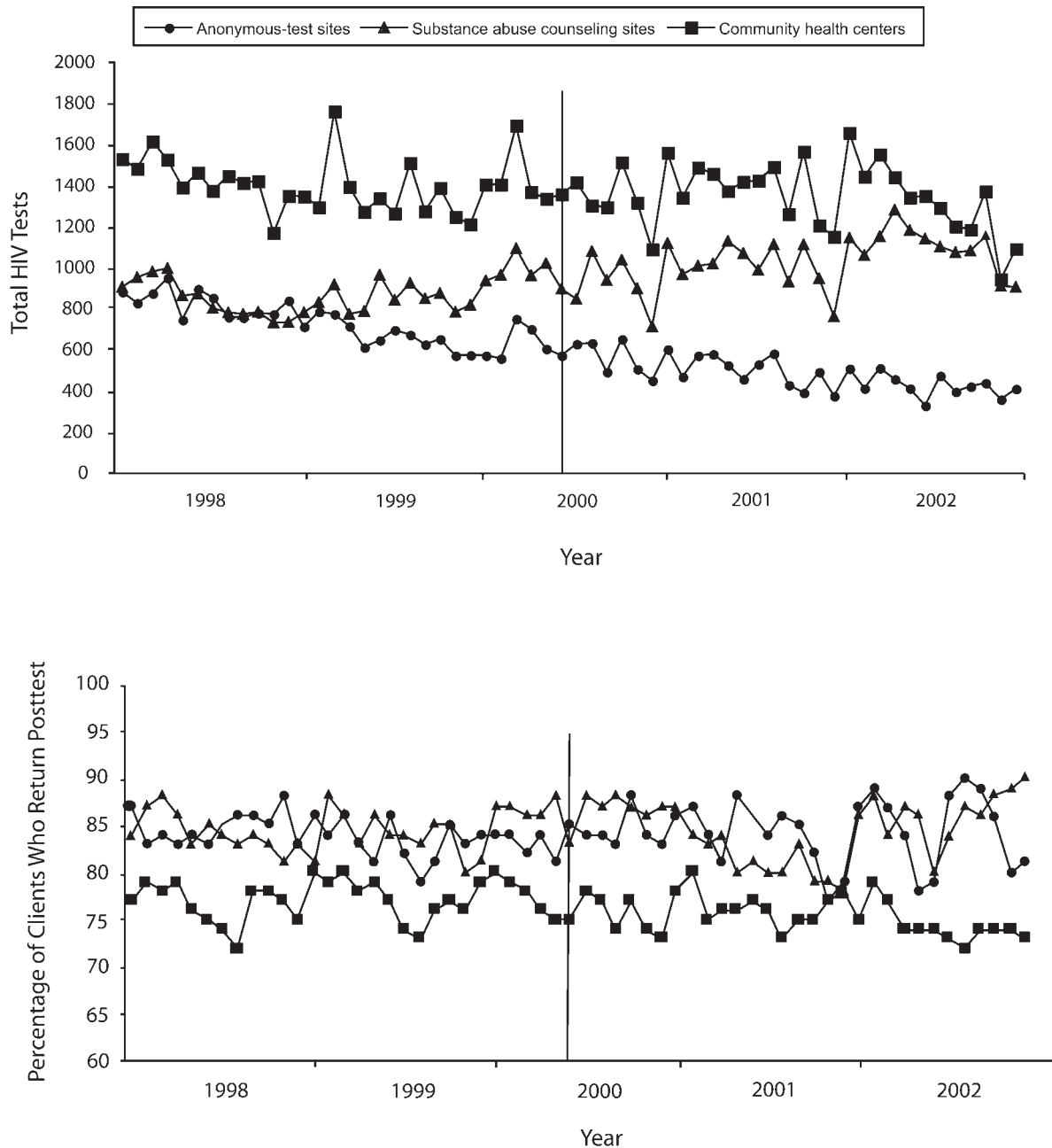
(91/124=73.4%) than they were before the law (137/196=69.9%). Conversion rates did not differ significantly by gender, age group, race/ethnicity, or HIV risk factor before or after implementation of the law (subgroup analyses not shown).

## DISCUSSION

Previous research did not consistently establish a deterrent effect of HIV reporting policies on HIV testing behaviors. Our study addressed limitations of previous research by studying testing behavior in a high-HIV prevalence state and by investigating whether HIV name-based reporting had a differential effect on demographic and risk-related subgroups. We used independent data sources and applied multiple methods to assess the effect of New York's HIVRPN law on HIV testing behaviors. Triangulation of research methods provided added strength to our primary finding that the HIVRPN law has not deterred HIV testing in New York State. Consistent with the HIV Testing Survey literature, HIV Testing Attitudes and Practices Survey respondents were largely unaware of the specifics of the HIVRPN law, and very few cited concern about their name being reported to the government as a reason for avoiding HIV testing. In contrast to a few studies that used HIV Testing Survey data and were conducted in other states, we found no evidence that certain subgroups were more likely to report avoiding or delaying their HIV testing decisions.

Those who were tested after the law went into effect were actually less likely to know that naming partners is voluntary, perhaps indicating that discussion of this topic during pre- and posttest counseling is confusing to some clients. This possibility is corroborated by results from a recent survey of HIV testing providers in New York State, which found that approximately one third of HIV counseling and testing providers were unaware that naming partners was not mandatory for those testing positive for HIV.<sup>25</sup>

Analysis of HIV Counseling and Testing System, Medicaid, and Maternal Pediatric Newborn Prevention and Care Program data clearly indicated that levels of HIV testing in New York State did not decrease following



Note. Horizontal line indicates HIV Reporting and Partner Notification Law implementation in June 2000.

**FIGURE 1—Data from HIV Counseling and Testing System databases, by setting, showing total HIV tests (a) and HIV posttest return rates (b).**

implementation of the HIVRPN law. Similarly, posttest counseling rates and rates of conversion from anonymous to confidential status among individuals testing positive for HIV also remained stable. As with our HIV

Testing Attitudes and Practices Survey of high-risk individuals, and contrary to some existing literature, we found no consistent evidence of a differential effect of name-based reporting on testing behavior among certain

risk-related subgroups. The 1 consistent subgroup finding was that anonymous HIV testing levels decreased following implementation of the HIVRPN law. Follow-up discussions with anonymous counseling and testing

**TABLE 3—Summary of ARIMA Time-Series Models for HIV Counseling and Testing System, Medicaid, and Maternal Pediatric Newborn Prevention and Care Program Data: New York State**

	ARIMA Model <sup>a</sup>	Before HIVRPN Law Intervention	Change After HIVRPN Law <sup>b</sup>	P
<b>HIV Counseling and Testing System models</b>				
Testing venue, no. of HIV tests per month				
Anonymous-testing site	(2,0,0)	733	-115.6	.073
Substance use treatment site	(1,0,0)(1,0,0) <sub>12</sub>	875	+52.5	.298
Community health center	(0,0,0)(1,0,0) <sub>12</sub>	1406	-17.9	.609
Testing venue, % of HIV tests with posttest counseling				
Anonymous-testing site	(0,0,0)	85%	+0.002	.81
Substance use treatment site	(1,0,0)	84%	-0.004	.74
Community health center	(1,1,0)	77%	+0.007	.76
<b>Medicaid models</b>				
Billing type				
HIV pretest billings, no.	(1,1,0)	5794	-127.5	.81
HIV posttest billings, no.	(1,1,0)	4330	-73.2	.87
<b>Maternal Pediatric Newborn Prevention and Care Program models</b>				
Intervention point, % tested during pregnancy				
HIVRPN law implementation	(1,0,0)	65	+295	.85
Implementation + 3 months	(1,0,0)	68	+110	.94
Implementation + 6 months	(1,0,0)	69	-351	.82
Implementation + 9 months	(1,0,0)	71	+340	.83

Note. ARIMA = autoregressive, integrated, moving average; HIVRPN = HIV Reporting and Partner Notification.

<sup>a</sup>Specifies the number of autoregressive, integrated, and moving average components necessary to remove trend and seasonality from each model. Seasonality adjustments, if present, are specified by subscripted parentheses.

<sup>b</sup>Slope (b) reflects the change after we controlled for autocorrelation as specified in ARIMA model column.

data throughout the entire study period. However, we could not control other factors, such as changes in staffing, funding levels, hours of operation, area-specific HIV testing media campaigns, and so forth. These factors likely accounted for at least some of the observed decrease in anonymous HIV testing levels.

The counseling and testing data used in this study do not represent the universe of HIV testing performed in New York State. HIV testing through private physicians and health maintenance organizations is the largest source of excluded HIV testing activity. These venues account for an estimated 44% of all HIV testing conducted in the United States.<sup>31</sup> We estimate that our data correspond to between 20% and 25% of all HIV tests conducted across New York State. This estimate was arrived at as follows. Using Behavioral Risk Factor Surveillance System data, we estimated the 1-year New York State HIV testing rate among persons aged 18 to 64 years to be about 15%.<sup>32</sup> Applying this rate to Census 2000 data for persons aged 18 to 64 years residing in New York State yields an estimated 1.8 million HIV tests per year. Approximately 400 000 HIV tests per year were included in the 3 data sources used in our study, corresponding to about 22% of the estimated 1.8 million tests statewide. Finally, HIV Counseling and Testing System data provide the number of HIV tests performed, not the unduplicated number of individuals tested.

HIV surveillance is critically important to track the HIV epidemic, guide prevention activities, and anticipate care needs. Named reporting is the preferred method for conducting surveillance.<sup>33</sup> Our findings indicate that, in a large state with a diverse population and a high prevalence of HIV infection, the surveillance benefits associated with HIV name-based reporting are not being offset by unfavorable changes in HIV testing behaviors, including among those at high risk of acquiring HIV. These findings may help inform future discussions of this issue. ■

#### About the Authors

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program staff suggest that this long-term declining trend was attributable to increases in publicly available HIV testing options and to increases in staff time spent offering HIV testing in nonpublic testing venues, particularly jails and prisons. These HIV testing settings were not included in this analysis, but supplemental data analysis revealed that HIV testing in criminal justice settings increased consistently throughout the study period.

HIV Testing Attitudes and Practices Survey data also did not show that high-risk individuals are moving toward higher rates of anonymous HIV testing: the percentage of survey respondents who reported that their most recent HIV test was anonymous before the law took effect was similar to the percentage testing anonymously afterward.

Our study has several limitations. The HIV Testing Attitudes and Practices Survey component was successful at surveying individuals at

elevated risk for acquiring STDs, including HIV. However, because this component did not employ a probability sampling method, the findings cannot be generalized beyond the sampled venues. HIV Testing Attitudes and Practices Survey data also excluded New York City sampling venues. However, comparable venues in New York City were included in the 2002 administration of the HIV Testing Survey, which found that just 8.5% of respondents cited concern about their name being reported to the government as a reason for not being tested, with fewer than 1% citing this as their primary reason.<sup>7</sup>

A primary limitation of the HIV testing trend component is that testing site-specific changes in policies and procedures during the course of the study period could not be accounted for. To minimize the effect of changes over time, we included only those testing venues and only those sites that submitted

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## Contributors

J.M. Tesoriero assisted in originating the study, developed the data analysis plan, analyzed the HIV testing trend data, and led the writing of the article. H.B. Battles oversaw the study, led survey development, and assisted in the writing of the article. K. Heavner performed data analysis for the interview portion of the study. S.-Y.J. Leung assisted in originating the study and in survey development. C. Nemeth assisted in survey development and coordinated the interview component of the study. W. Pulver oversaw and assisted in the analysis of the Maternal Pediatric Newborn Prevention and Care Program data. G.S. Birkhead originated the study and assisted in the writing of the article.

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## Human Participant Protection

The New York State Department of Health institutional review board approved the interview component of this study. Informed consent was obtained from all interviewees. No approval was required for the remaining study components.

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